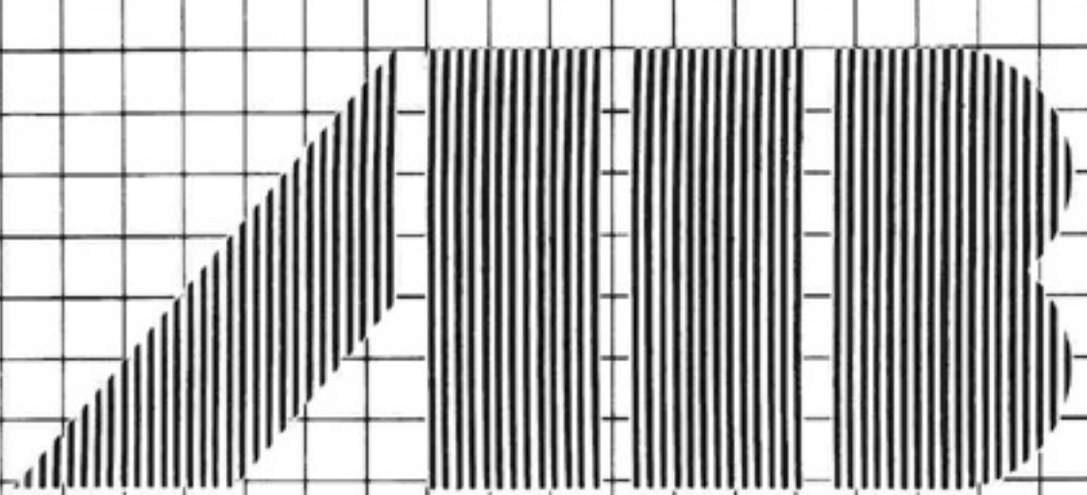
Technics

Operating instructions

System Tonearm EPA-250

Arm Base (EPA-B500)
Arm Unit (EPA-A250)



- Interchangeable "S" shaped universal arm unit.
- Dynamic damping system.
- Gimbal suspension arm base with miniture bearing friction of 7 mg or less.
- Precise helicoid height adjustment of 20 mm.
- Low resistance and low capacitance phono cable.

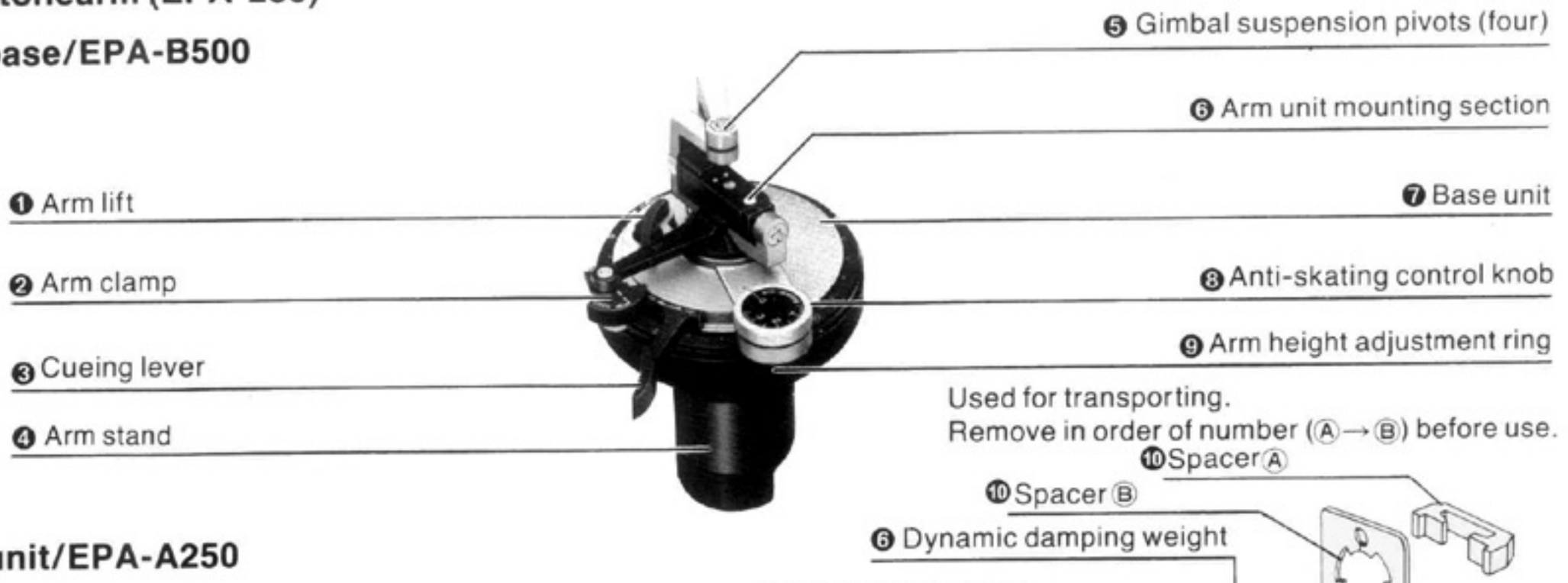
English ..... 4~10
Deutsch ..... 11~18
Français ..... 19~26
Espanol ..... 27~34
Nederlands ..... 35~42
Svenska ..... 43~50
Dansk ..... 51~58
Italiano ..... 59~66

Before operating this product, please read these instructions completely.

Parts identification

System tonearm (EPA-250)

■ Arm base/EPA-B500



■ Arm unit/EPA-A250

Assembly and adjustments

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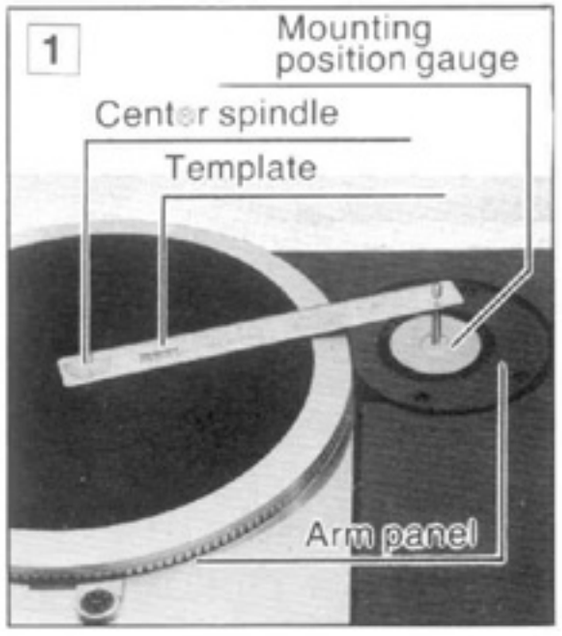

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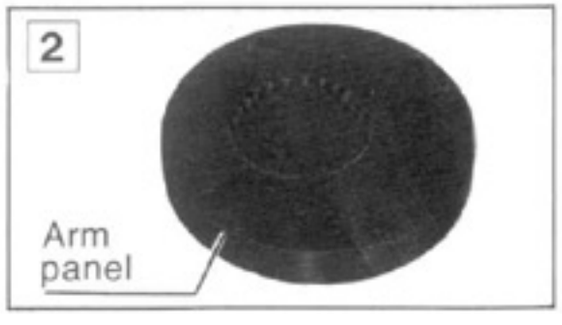

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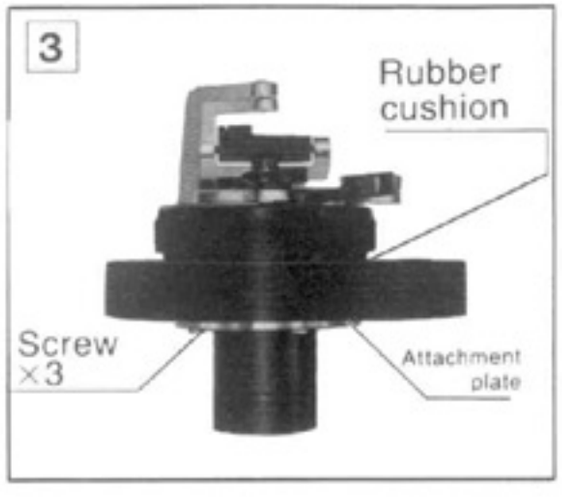

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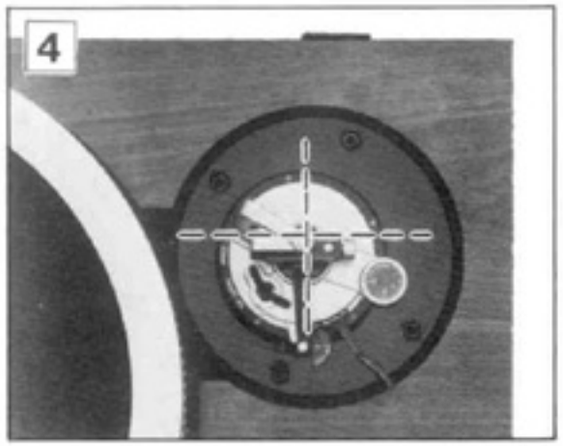

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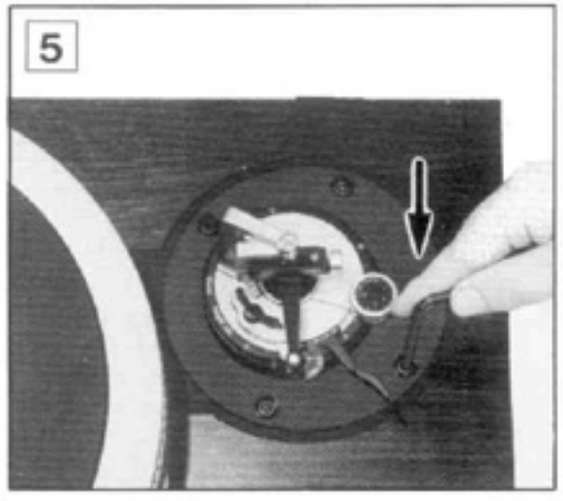

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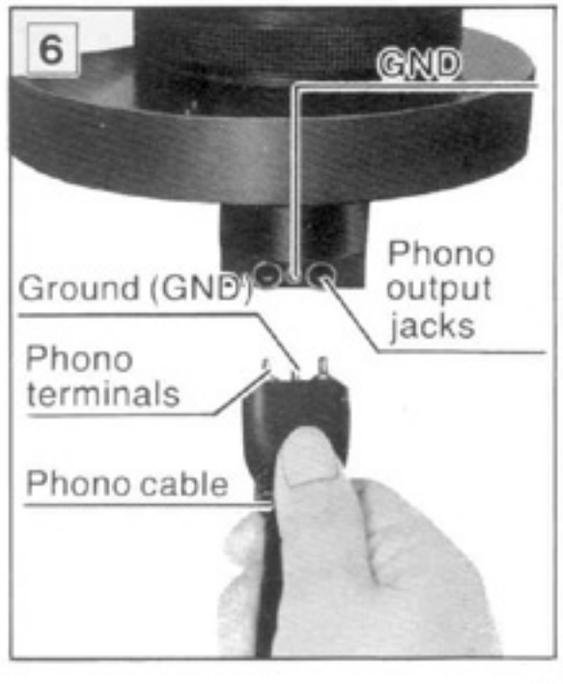

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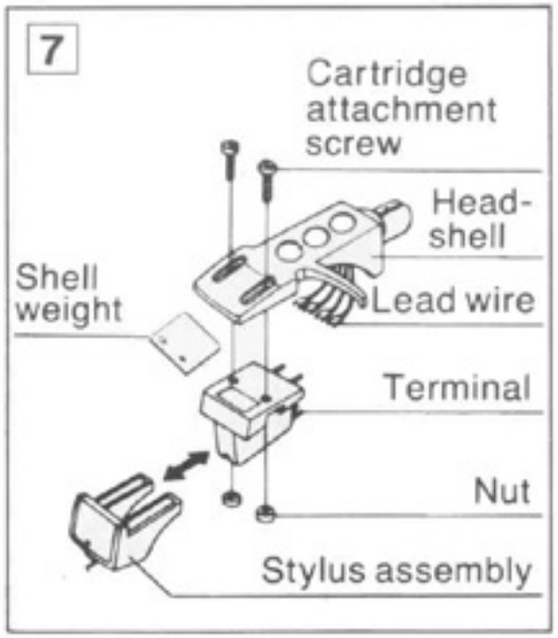

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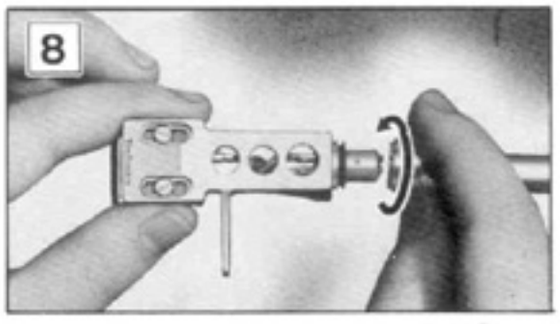

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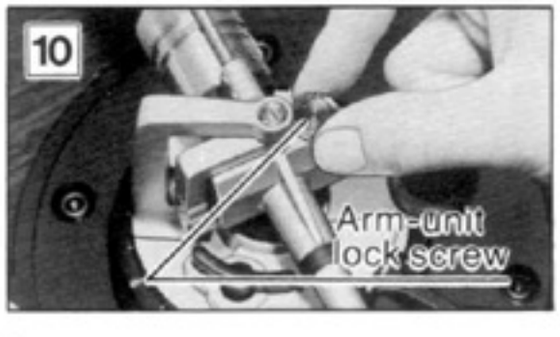

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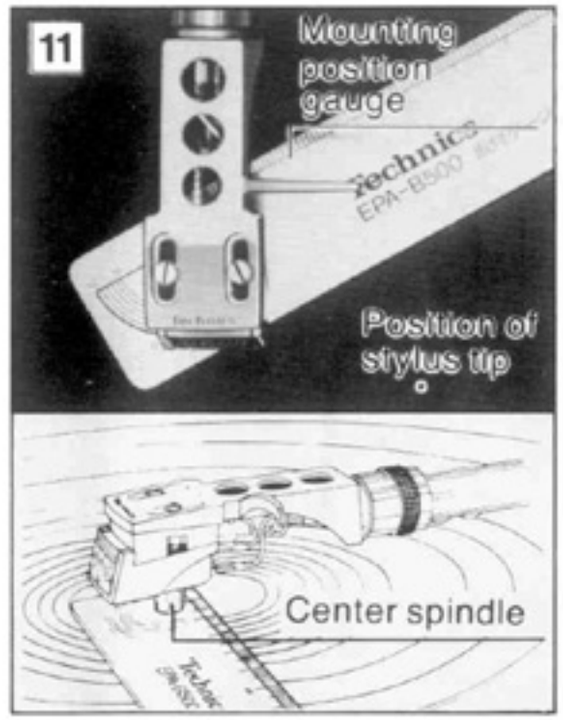

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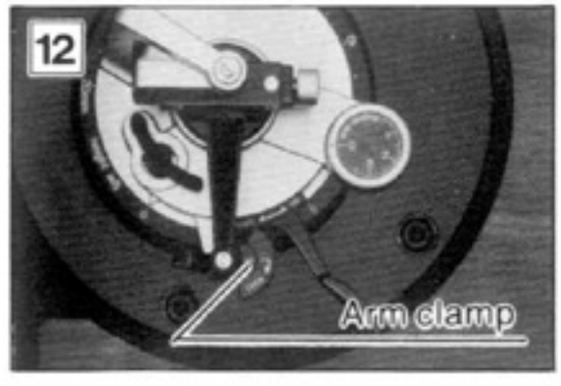

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Turn counter clockwise to increase Stylus Pressure.
Turn clockwise to reduce Stylus Pressure.
Stylus-pressure adjustment ring

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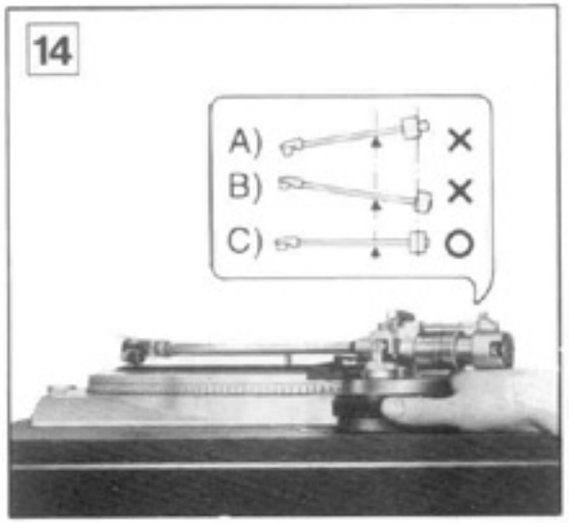

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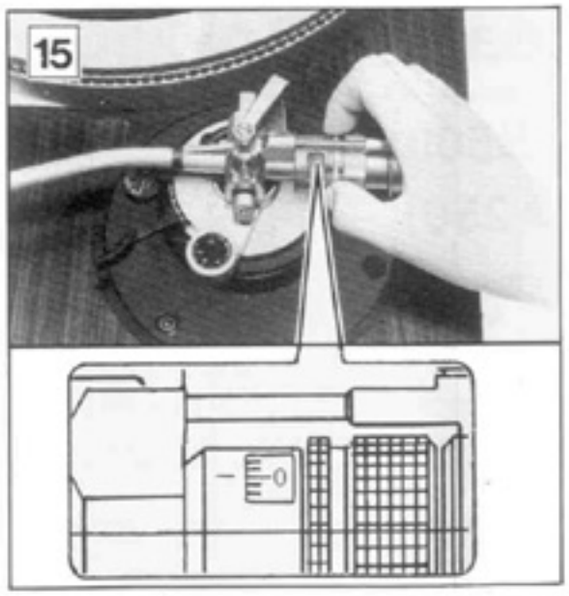

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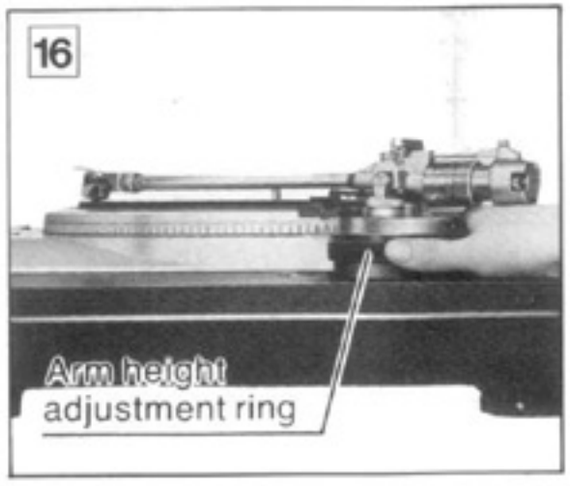

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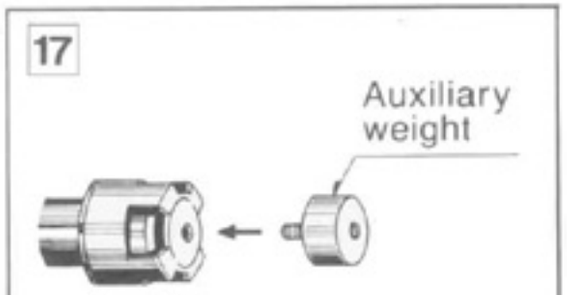

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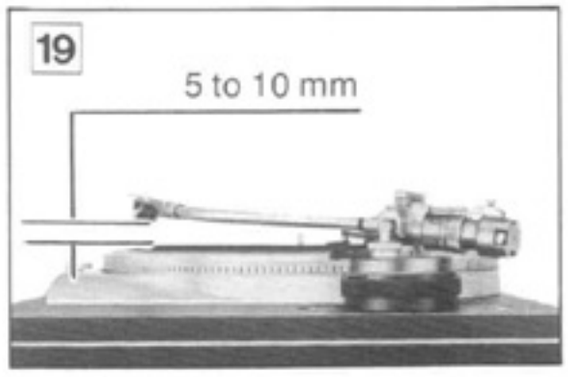

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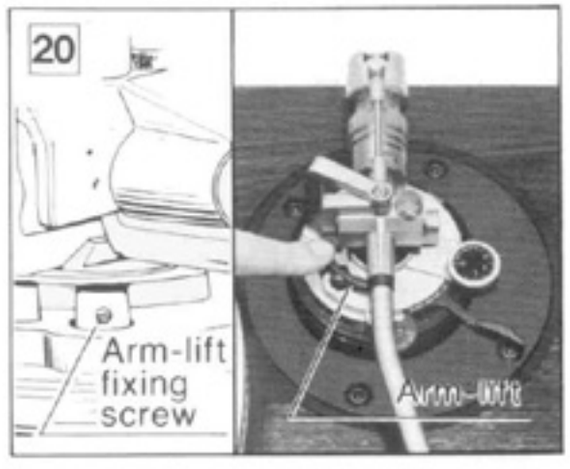

Points to note:

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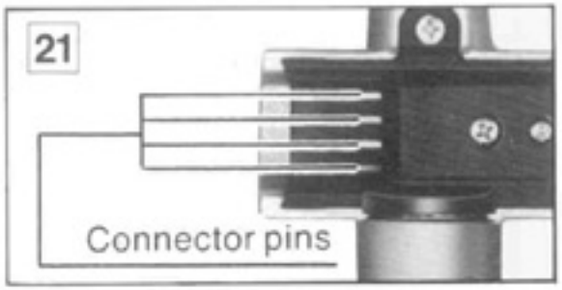

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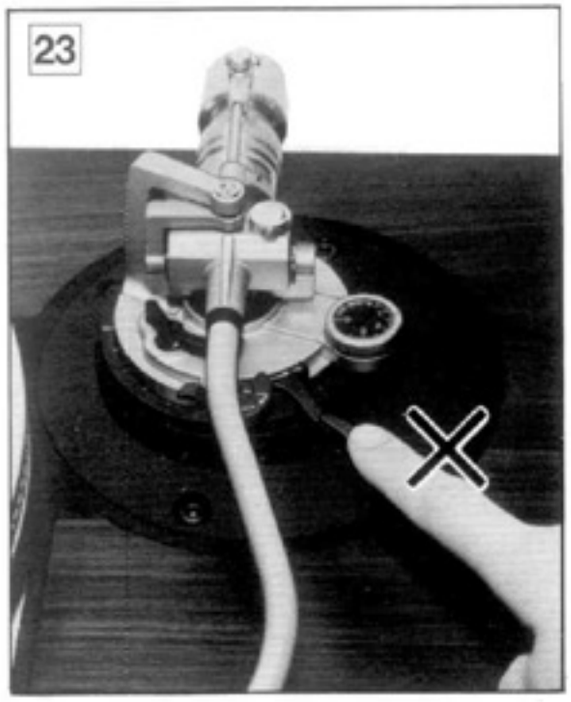
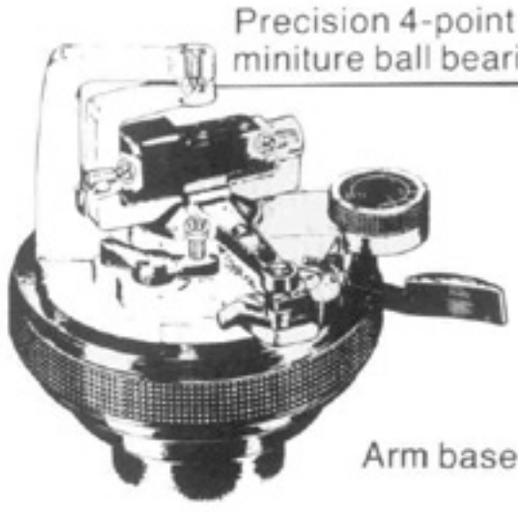


Gimbal suspension construction



Arm base EPA-B500

Thank you very much for purchasing the EPA-250 Technics System Tonearm

The EPA-250 is different from conventional tonearms in that it consists of a separate arm unit (EPA-A250) which is mounted on a special arm base (EPA-B500).
This can be likened to a camera, the arm base being the body and the arm units being the interchangeable lenses. Optional arm units can be employed in accordance to the compliance and mass of your cartridge and changed as simply as you would change the headshell.
When making changes, please also refer to the instruction manual provided with the arm units.

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■ Checklist of parts

Arm base EPA-B500

Arm base unit 1
Rubber cushion 1
Attachment plate 1
Phono cable 1
Template 1
Mounting position gauge 1
Screwdriver 2
Washer 3
Spring washer 3

Attachment screws	Dimensions	Number	Proper base thickness	**Technics** turntable base (optional)
	M4×16	3	12.5~18.5 mm	
	M4×20	3	16.5~22.5 mm	SH-15B1/ SH-15B2
	M4×25	3	21.5~27.5 mm	SH-10B3

Arm unit EPA-A250

Arm unit 1
Headshell 1
Auxiliary weight 1
Screws for cartridge 6
Nuts for cartridge 2
Shell weight 2

Assembly and adjustments

Note:
The following instructions apply to mounting the EPA-250 on the SH-15B2 base (sold separately). A similar procedure applies to mounting on other base or cabinets.

■ Locating the arm base

1. Set the template on the center spindle of the platter and use the mounting position gauge to establish the correct position on the arm panel (the point where the rear portion of the arm unit will not make contact with the dust cover during play), and inscribe a circle around the mounting position gauge with a pencil. **(Fig. 1.)**
2. Remove the arm panel from the turntable base.
   Note:
   The SH-15B2 base has a mounting hole suitable for the EPA-250.
3. Use a drill to make a hole corresponding to the above-mentioned position, and remove any rough edges using a file. **(Fig. 2.)**

■ Installation of arm base

1. Lay down the rubber cushion and attach the arm base unit to the arm panel, using the screws and plate provided to attach it from underneath. **(Fig. 3.)** At this time, confirm that the direction of the arm base is straight, and then use a Philips-head screwdriver to attach it. **(Fig. 4.)**
2. Secure the arm panel to the turntable base by tightening the 4 hexagonal screws. **(Fig. 5.)**
3. Connect the phono cable provided to the phono output jacks on the arm base. (The small pin in the center is the ground.) **(Fig. 6.)**

■ Attachment of cartridge (Fig. 7.)

Note:

These instructions are for attachment of a Technics EPC-205C type cartridge.

If another cartridge is to be used please attach it in accordance with the cartridge's instruction manual.

1. Connect the lead wires to the cartridge. The cartridge terminals are differentiated by color, and the leads should be connected accordingly.
   Red→(R)+(right channel+terminal)
   Green→(R)−(right channel ground terminal)
   White→(L)+(left channel+terminal)
   Blue→(L)−(left channel ground terminal)
2. Use the supplied screws and nuts to temporarily secure the cartridge to the headshell.
   Note:
   To prevent damage to the stylus assembly, it is recommended that it be removed from the cartridge during installation.

Using the built-in weight, cartridges weighing from 6 g to 8 g can be used.

Using the auxiliary weight or shell weights (supplied) permits cartridges in the weight ranges shown in the chart to be used.

■ Suitable cartridge weight and compliance relationships

Compliance ×10⁻⁶cm/dyne (100 Hz) \ Cartridge weight (g)	3	4	5	6	7	8	9	10	11	12
Without shell weight or auxiliary weight 8~14					6~8 g					
Using shell weight (SFCZB30505) 8~14			4~6 g							
Using shell weight (SFPZB3501) 8~14		3~4 g								
Using auxiliary weight 6~12									10.5~12.5 g	

Note:

The headshell or auxiliary weight may be needed to balance the tonearm even when the cartridge weight is within the compatible range due to slight differences in cartridge weights and center of gravity.

One of the supplementary weights should also be used when the specified stylus pressure (tracking force) can not be applied without it.

■ Attachment of headshell (Fig. 8.)

Insert the headshell plug into the end of the tonearm. Then, while holding the headshell level, tighten the locking sleeve firmly by turning it in the direction of the arrow.

■ Installation of the arm unit (Figs. 9, 10.)

Align the mounting section of the arm unit with that of the arm base, and while sliding it in the direction of the arrow, insert it until it reaches the fixed position and stops. Then secure it with the arm-unit lock screw.

Notes:

- When installing or removing the arm unit, be sure to turn the amplifier's volume control to "0" or turn off the amplifier's power before loosening the arm unit locking screw.
- Please be certain to use the arm unit only when it is locked into position. If not sufficiently tightened, a humming noise will be produced.

■ Adjustment of overhang (Fig. 11.)

1. The overhang on this unit should be 15 mm.
   ●Place the template over the center spindle and align the stylus position with the 15 mm line. Then secure the cartridge in that position.

Notes:

●Be careful not to damage the stylus tip.

●Depending on the cabinet (and dust cover) you use, there may be cases where the stylus pressure adjustment ring comes into contact with the anti-skating control knob when the tonearm unit is moved in the direction of the center spindle. In such a case, loosen the weight lock screw and turn the stylus pressure adjustment ring clockwise so it moves further back.

■ Concerning the arm clamp (Fig. 12.)

An arm clamp is employed to lock the rotating section of the gimbal suspension in place. When installing the arm unit or when not using the turntable, lock the tonearm suspension with the clamp.

Lock the arm clamp to prevent movement of the base pivot when mounting or disengaging the arm unit.

This will help avoid accidental damage to the stylus.

■ Adjustment of horizontal (zero) balance and stylus pressure (Figs. 13, 14, 15.)

1. Loosen the weight lock screw (by turning counterclockwise) and turn the stylus-pressure ring so that the tonearm is balanced horizontally. **(Fig. 13.)**

   Notes: (Fig. 14.)

   A) The cartridge end goes down because the ring is too far forward.

   B) The cartridge end rises because the ring is too far back.

   C) The tonearm is balanced because it remains parallel to the turntable surface.

2. Line up the stylus pressure scale ring "0" point with the center (—) of the shaft. **(Fig. 15.)**
3. Turn the stylus-pressure adjustment ring until the desired stylus pressure is indicated.

Note:

●The stylus pressure scale ring rotates when the stylus-pressure adjustment ring is turned, so watch the stylus pressure scale ring to set the stylus pressure.

■ Adjustment of arm height (Fig. 16.)

On this unit, the height of the arm can be varied up to 20 mm by rotating the adjustment ring. The height is indicated in 1 mm increments on the scale.

1. Place a record on the turntable and, without rotating the platter, gently lower the stylus onto the record.
2. Rotate the arm height adjustment ring until the arm unit appears parallel to the record. **(Fig. 16.)**

Note:

●Do not touch the arm unit at this time. If the arm unit moves, this can result in damage to the stylus.

■ Auxiliary weight (Fig. 17.)

The range of cartridge weights suitable for mounting on this arm is 6~8 g. However, if you attach the accessory auxiliary weight to the rear end of the arm unit, you can use cartridges weighing from 10.5 g to 12.5 g.

Notes:

●If you attach the accessory auxiliary weight, the stylus pressure indicated on the stylus pressure scale ring will be less than the actual stylus pressure.
Refer to the chart for conversion to actual stylus pressure value.

●It may be necessary to remove the dust cover if the auxiliary weight bumps against it during play.

■ Stylus pressure conversion chart when using auxiliary weight

Actual stylus pressure	0.2	0.4	0.6	0.8	1.0	1.2	1.25	1.4	1.5	1.6	1.75	1.8	2.0
Scale ring indication	0.18	0.35	0.55	0.7	0.9	1.1	1.15	1.25	1.35	1.45	1.6	1.65	1.8

■ Adjustment of anti-skating control (Fig. 18.)

After adjusting the stylus pressure, turn the anti-skating control knob to the same value as the stylus pressure setting.

■ Adjustment of arm-lift height (Figs. 19, 20.)

The arm-lift height (the distance of the stylus tip from the disc with the cueing lever in the up position) is about 5 to 10 mm. If adjustment is necessary, follow the procedure below:
procedure below:

1. Set the cueing lever to the [up] position.
2. Slightly loosen the arm-lift screw, and raise or lower the arm lift. If this control is raised by about 1 mm, the stylus will be raised by about ten times that amount, or about 10 mm.
3. Secure the arm-lift with the arm-lift screw.

■ Connection of phono cable

After all adjustments have been completed, connect the phono cable to the phono input terminals on the amplifier or receiver.

Phono Terminals	**Amplifier/Receiver**
White (L)→	Phono L input terminal
Red (R)→	Phono R input terminal
Black (ground wire)→	GND terminal

Note:
Be certain to connect the ground wire. Without this connection, a hum may be produced from the amplifier or receiver.

Precautions:

- Do not twist or pull the arm unit's connector pins or the connectors on the arm base, as this could lead to misconnections. **(Figs. 21, 22.)**
  Be particularly careful when installing or removing the arm unit.
- Do not depress or raise the cueing lever. Slide it to the right or left. **(Fig. 23.)**
- Please be sure to use the tonearm in a horizontal position.
- Do not push in the arm-lift when the screw has been secured. **(Refer to Fig. 20.)**

Specifications

Arm base EPA-B500 (Patent pending)

Type:	Interchangeable arm unit type
Pivot construction:	Gimbal suspension
Arm height range:	42 mm~62 mm from the surface of the base to the arm pipe (Helicoid portion 20 mm)
Friction:	Under 7 mg (lateral, vertical)
DC resistance of phono cable:	39.5 mΩ/m
Capacitance of phono cable:	41.5 pF/m
Diameter of arm base mounting hole:	∅62 mm

Arm unit EPA-A250 (Patent pending)

Type:	"S" shaped universal type interchangeable arm unit with dynamic damping system
Effective length:	250 mm
Rear end length:	78 mm~93 mm from the tonearm fulcrum. (max. 104 mm using auxiliary weight)
Overhang:	15 mm
Lateral tracking error:	+1°6′ at the inner groove, 30 cm record +2°6′ at the outer groove, 30 cm record
Effective arm mass:	14 g (without cartridge)
Applicable cartridge compliance (dynamic, 100 Hz):	**See note** See page 6
Headshell weight:	7.5 g
Applicable cartridge weight:	See page 6
Applicable stylus pressure:	0~2 g
Resonance peak:	Below 8 dB
Cartridge attachment:	JIS 12.7 mm mounting space
Headshell terminal lug:	∅1.2

Note: The compliance values of Technics cartridges are for dynamic compliance. When a static compliance value is given, divide in half to obtain the approximate dynamic compliance value.

Specifications subject to change without notice.

Features

■ A system tonearm that assures a close matching of tonearm and cartridge characteristics

The differences in compliance and mass between various cartridge models change the low range resonance frequency greatly. The low range resonance frequency becomes lower the greater the effective mass of the tonearm and the higher the compliance of the cartridge is. In order to obtain the ideal low frequency response from the cartridge and tonearm in use, the low range resonance frequency must not be too high or too low. As with the EPA-500, the construction of the EPA-250 allows the tonearm unit having the best matching characteristics with the compliance and mass of the cartridge in use to be selected and changed whenever required. For maximum versatility and convenience, the EPA-250 employs a universal connector so standard 4-pin connectors can be used.

■ Dynamic damping construction reduces low range resonance peak by over 4 dB

The EPA-250 counterweight features a built-in dynamic damping construction that reduces the sharpness of the tonearm low range resonance peak (Q) and guarantees a very flat frequency response. The result is a system that faithfully transmits signals from the cartridge and maintains a very high S/N ratio. Also, because this is a system tonearm, it is possible to select the arm unit that is best for the cartridge being used.

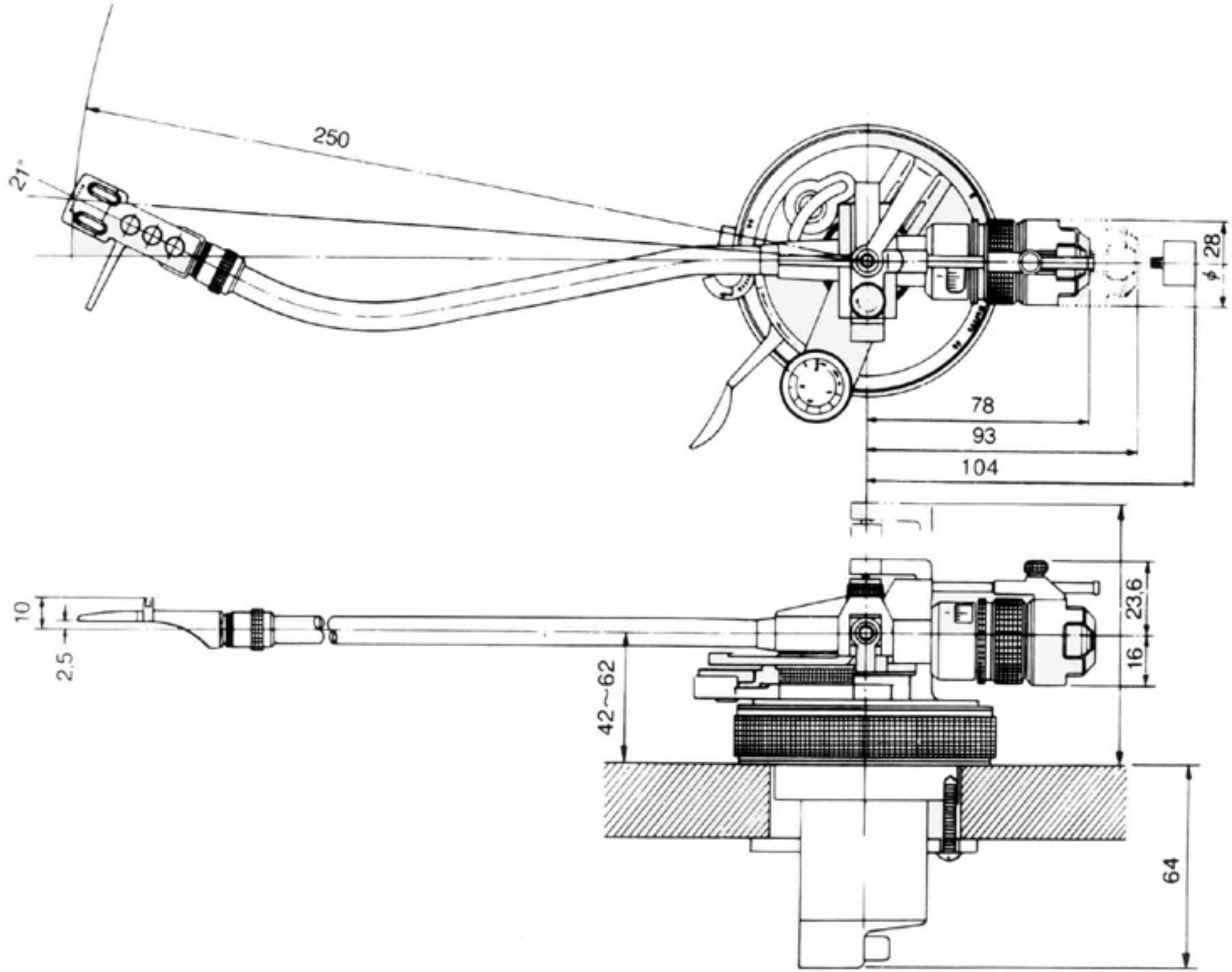
■ Arm base with precision gimbal suspension

The arm base of the EPA-250 is equipped with a true gimbal suspension system with extremely low friction in both planes. Four high-precision ball bearings, two each for the horizontal and vertical axes of rotation, pivot the arm in such a way that it is effectively supported at one single point. Arm sensitivity is extremely high thanks to a bearing friction of only 7 milligrams or less in both axes.

■ Low capacitance, low DC resistance output leads

The DC resistance of the output leads is an extremely low 39.5 mohms/m and capacitance is only 41.5 pF/m. This assures that you will receive optimum performance from both MM and MC type cartridges.

■ Dimensions (mm)



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